

ABSTRACT**METHOD AND MECHANISM FOR TUNING
DIELECTRIC RESONATOR CIRCUITS**

The invention comprises a technique and associated mechanisms by which dielectric resonator circuits, such as filters, can be tuned in both frequency, bandwidth or both without the need for irises, tuning screws and/or tuning plates. In accordance with the invention, the positions of the dielectric resonators are adjustable relative to each other within the cavity in multiple ways, including vertically and horizontally. The dielectric resonators also may tilt relative to each other. Furthermore, an off-center longitudinal hole can be machined in one or more of the dielectric resonators so as to make the electromagnetic field of the resonator non-uniform so that the dielectric resonator can be rotated about its longitudinal axis to alter the coupling between dielectric resonators. In accordance with another aspect of the invention, frequency tuning can be accomplished by using two separate dielectric resonators adjacent each other, one on top of the other, and adjusting the vertical spacing therebetween to achieve the desired center frequency within that dielectric resonator pair.